

Washtenaw County Opportunity Index – Technical Documentation and Data Dictionary

Op-por-tu-ni-ty:

Having the ability to choose

Washtenaw County is one of the most economically segregated parts of the country.¹

Historically, certain individuals have faced extreme limitations on where they could live and purchase housing, affecting their ability to build and pass along wealth. Many of the geographic patterns of racial and socio-economic segregation remain, making opportunity linked to both race and place.

The Washtenaw County Opportunity Index is an important tool that allows us to identify disparities in access to safe and affordable housing, quality education, employment, adequate healthcare, and stable neighborhoods.

- We know these are structural and systemic issues, which compound each other – not a reflection of individual decision-making.
- We can identify where residents tend to thrive while their neighbors struggle.
- We can use information to guide future policy decisions, prioritizing resource distribution to promote equity and opportunity.

We envision a Washtenaw County where every resident has the opportunity to choose their housing, education, employment, healthcare, and neighborhood conditions.

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¹ <http://martinprosperity.org/wp-content/uploads/2015/02/Segregated-City.pdf>

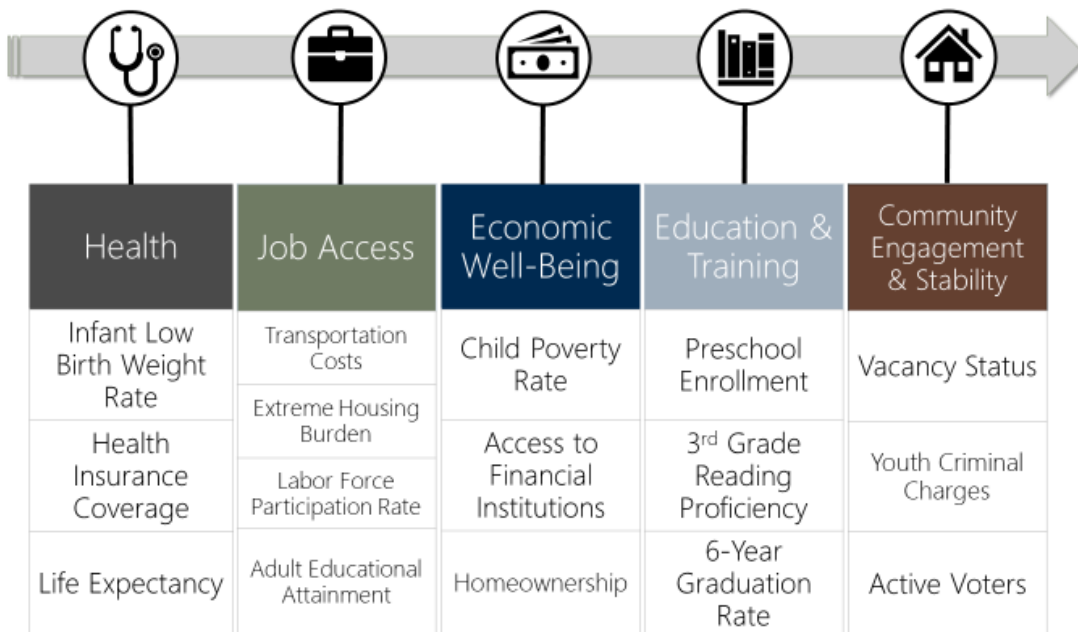
I. Technical Documentation

Level of Information

- Indicators are reported at a Census tract-level, to understand outcomes on a neighborhood-level sense. Census tracts have between 1,000 – 8,000 people, varying in terms of geographic space as a result.
- In the map, city and township boundaries are also available as a layer on top of Census tracts. This helps compare tract locations and sizes against more common municipal/political areas.

Index Structure

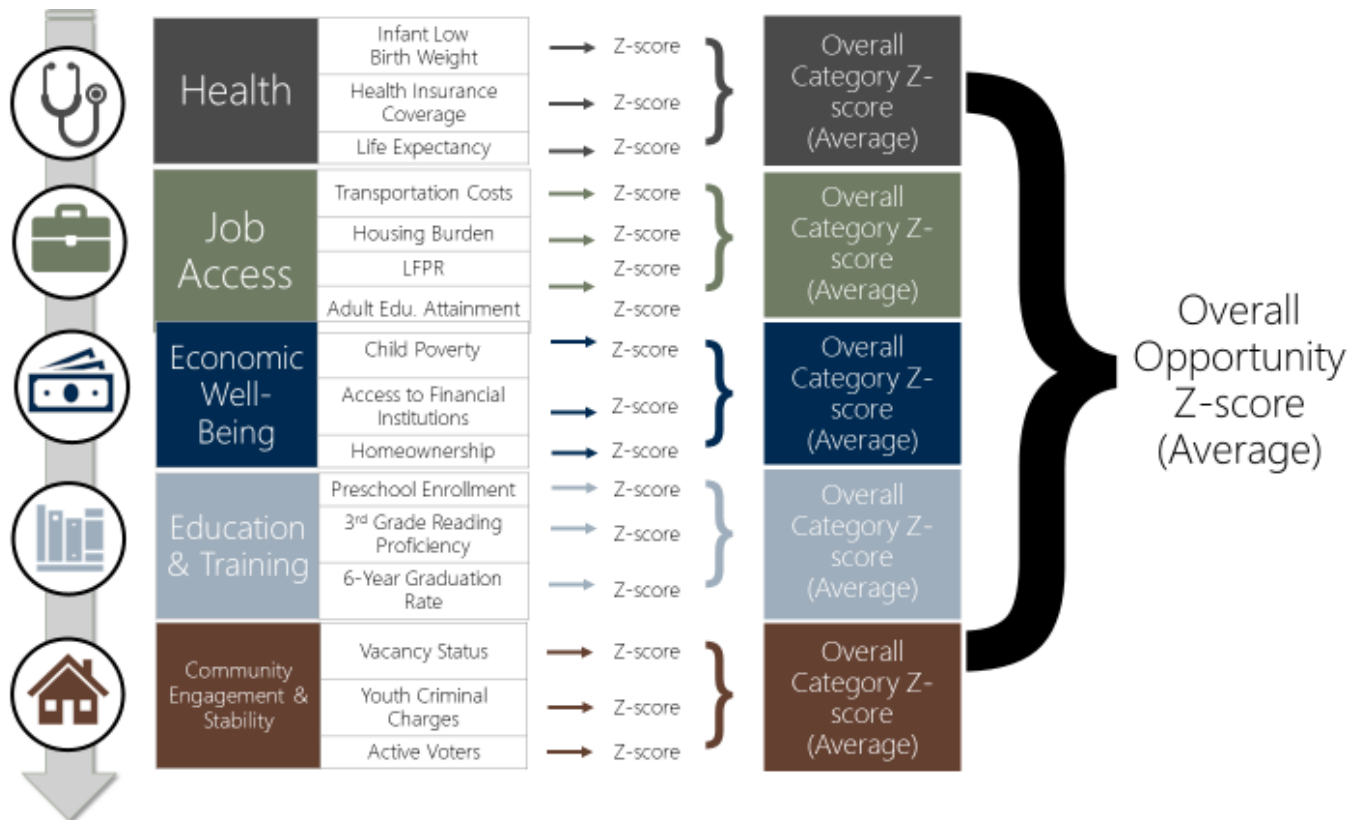
- The Opportunity Index measures access to opportunity by combining 16 indicators into five categories of opportunity:



Approach

- Available geographies:
 - Washtenaw County has 100 total Census tracts.
 - 3 tracts (4219, 4229, 9840) were consistently removed due to a small count of residents. This means we didn't report any data for these tracts.
 - 3 tracts (4002, 4022, and 4111) were also removed due to the high proportions of students living in temporary dorm housing.
 - For two education indicators (3rd grade reading proficiency and 6-year graduation rates), tracts with fewer than 10 records in the numerator or 30 records in the denominator of the two individual-level educational indicators weren't reported. This fulfills FERPA regulations around data based on individual student records.
- Standardization:

- The Index uses standardizing, which means the datapoints for each indicator at the Census tract level were compared to the county-wide average for that indicator and then converted to a z-score.
- A final positive z-score means outcomes in that tract are above the county-wide average, and a negative z-score means outcomes in that tract are below the county-wide average.
- Z-scores create better apples-to-apples comparisons between different types of data.
- Note that for some indicators, there was one additional step while converting raw datapoints to z-scores. For these, a lower raw data value indicated a better outcome (e.g. a lower infant low birth weight rate means fewer infants were born with low weight, which is preferable). The z-scores for infant low birth weight rate, transportation costs, extreme housing burden proportion, child poverty rate, vacancy status, and disproportionate minority contact were multiplied by -1 to ensure all final indicator z-scores moved in the same direction.
- Categories and scoring:
 - To give a birds-eye view of what is happening within pieces of opportunity, we grouped indicators into categories.
 - Category z-scores are the average of the indicator z-scores, and the overall opportunity z-score is the average of all category z-scores for the tract.



- Scoring:
 - We ordered our results into four groups, to understand how outcomes in certain tracts compare to outcomes elsewhere in the county.

- The groups are: very high access to opportunity, high access to opportunity, low access to opportunity, and very low access to opportunity.
- Lower rankings indicate room for improvement relative to the rest of the county and are not necessarily a sign of poor outcomes.
- To generate our groups, we used Jenks natural breaks. This method uses math to statistically group very similar data and maximize differences between groups, without paying attention to whether the groups are uniform. This differs from quartiles, which would have placed an equal number of datapoints in each of the four categories.
- Natural breaks draws the most significant disparities for comparison – helping us try to define, for example, what is really the “top.”

Mapping in ArcGIS Online

- Layers available to turn on or off:
 - The overall opportunity score, each category score, and demographic data, allowing for custom visualization.
 - City and township boundaries.
- Visualization:
 - We made choropleth maps to reflect our scores.
 - Dark blue represents very high access to opportunity, and dark red represents very low access to opportunity.
- Pop-ups:
 - Each category layer has a pop-up with all indicator data. For example, in the health layer, we could see the infant low birth weight rate, health insurance coverage, and estimated life expectancy. These are raw, unstandardized values: for example, 7%.
 - Indicator datapoints are also compared to thresholds, which can be thought of as “ideal” or “typical” benchmarks for comparison.
- Full dataset:
 - Available for those interested in advanced GIS functions, like copying layers to use in other maps or downloading all data.
 - For all tracts, includes all raw indicator data, standardized indicator data (currently hidden in map view), standardized category data, standardized overall opportunity score, and summary demographic data.
 - See codebook for more information on fields.

Previous Index

Washtenaw County’s Office of Community and Economic Development published the county’s first Opportunity Index in 2015, with support from numerous local partners and county departments and technical assistance from the Kirwan Institute for the Study of Race and Ethnicity at Ohio State University. The 2015 map can be found [here](#).

The previous Index reported a mix of the same and different indicators. Because indicators varied by category in 2015, though, z-scores and categories are not comparable in 2020. Raw datapoints for the same indicators, if processed similarly, may be comparable.

About Us

The 2020 refresh of Opportunity Index is a partnership between Washtenaw County and Poverty Solutions at the University of Michigan.

Overall goals for this Index were:

- To include as many public-facing data sources as possible
- To make the methodology as uncomplicated and replicable as possible
- To make information readily available for residents, community groups, and policymakers to advocate for priorities

Contacts:

- Teresa Gillotti, Director, Washtenaw OCED (gillottitm@washtenaw.org)
- Natalie Peterson, Data and Evaluation Manager, Poverty Solutions (petersna@umich.edu)

II. Data Dictionary

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HEALTH

Infant Low Birth Weight

Operationalization:

Defined as the proportion of infants weighing less than 2500 grams at time of birth, among all births.

Data Source: Washtenaw County Health Department and Michigan Department of Health and Human Services (MDHHS)

Years of Data: 2014-2016

Threshold or Parameters of Comparison: 7.8%

Determined by the Healthy People 2020 target measure to reduce low birth weight babies (see MICH-8 of Healthy People 2020).

Contacts:

Washtenaw County Health Department
Kelly McCarthy (mccarthyk@washtenaw.org)
Laura Bauman (baumanl@washtenaw.org)

Notes:

- Only tracts with at least 75 births over the three-year period were reported.

<h2>Health Insurance Coverage</h2>
Operationalization: Defined as the proportion of 18-64 year olds with health insurance coverage (either private or public). Determined by the rate of health insurance coverage for 18-64 year olds in the ACS 5-year estimates.
Data Source: American Community Survey (ACS) 5-year estimates, Table B27001
Years of Data: 2013-2017
Threshold or Parameters of Comparison: 95.6% The threshold represents the historical lowest level of uninsured individuals in Washtenaw County, at the high point of ACA enrollment and rate of coverage. The value came from the 2016 one-year estimate for the county overall among 18-64 year olds, in Table B27001.
Contacts: Washtenaw County Health Department Kelly McCarthy (mccarthyk@washtenaw.org) Laura Bauman (baumanl@washtenaw.org) Lily Guzman (guzmanl@washtenaw.org)

<h2>Life Expectancy</h2>
Operationalization: Defined as the average life expectancy (measured in years) of individuals at time of birth in each census tract.
Data Source: U.S. Small-Area Life Expectancy Estimates Project (USALEEP). Available from: https://www.cdc.gov/nchs/nvss/usaleep/usaleep.html .
Years of Data: 2010-2015
Threshold or Parameters of Comparison: 78.0 years old The threshold represents the weighted mean of life expectancy across all Michigan Census tracts (Washtenaw County Health Department).
Contacts: Washtenaw County Health Department Kelly McCarthy (mccarthyk@washtenaw.org) Laura Bauman (baumanl@washtenaw.org)



JOB ACCESS

Adult Educational Attainment

Operationalization: Defined as the proportion of adults in each census tract who have received an Associate Degree or higher.

Data Source: ACS 5-year estimates, Table B15001

Years of Data: 2013-2017

Threshold or Parameters of Comparison: 37.3%

The rate for the state overall, according to 2017 ACS 5-Year Estimates.

Contacts:

Teresa Gillotti, Washtenaw County Office of Community and Economic Development
Natalie Peterson, Poverty Solutions

Severe Housing Burden

Operationalization: Defined as the proportion of residents in each tract paying 50 percent or more of household income in the past 12 months on housing costs. Residents includes both homeowners and renters.

Data Source: 2017 ACS 5-Year Estimates: Tables B25091 and B25070

Years of Data: 2013-2017

Threshold or Parameters of Comparison: 15.2%

The national rate in 2017 of Americans facing severe (extreme) housing cost burdens (Harvard Joint Center for Housing Studies, <https://www.jchs.harvard.edu/blog/more-than-a-third-of-american-households-were-cost-burdened-last-year/>).

Contacts:

Teresa Gillotti, Washtenaw County Office of Community and Economic Development
Natalie Peterson, Poverty Solutions

Transportation Costs

<p>Operationalization: Defined as the estimated transportation costs for a typical household in a Census tract, as a percentage of the region’s typical household income.</p>
<p>Data Source: Housing and Transportation Affordability Index (HTI), Center for Neighborhood Technology (CNT)</p>
<p>Years of Data: 2015 ACS 5-Year Estimates, 2010 Census TIGER/Line files, 2014 Longitudinal Employer-Household Dynamics) Origin-Destination Employment Statistics (LODES), General Transit Feed Specification (GTFS) and AllTransit Data Builder, 2010-12 odometer readings in Chicago and St. Louis metro areas, 2006-2012 and 2013 Consumer Expenditure Survey (CES), 2015 National Transit Database</p>
<p>Threshold or Parameters of Comparison: 15%</p> <p>Defined by CNT as a benchmark for affordable transportation costs https://www.cnt.org/tools/housing-and-transportation-affordability-index</p>
<p>Data notes:</p> <ul style="list-style-type: none"> • CNT uses a predictive model of 14 input variables (including fixed household characteristics, employment data, transit metrics, housing characteristics, and walkability measures) to estimate 3 output transportation estimates (reflecting the costs for vehicle ownership, mileage per vehicle, and transit use per household). All three transportation estimates were then summed to estimate transportation costs. • CNT’s model sets fixed household characteristics (including median income, average household size, and average commuters per household) for a region (here defined as the county), based off the distribution of all households in that region. In doing so, CNT aims to isolate the effects of the built environment on transportation costs in the area – that any variation is due to place and location.
<p>Contacts:</p> <p>Teresa Gillotti, Washtenaw County Office of Community and Economic Development Natalie Peterson, Poverty Solutions</p>

<h2>Labor Force Participation Rate</h2>
<p>Operationalization: Defined as the proportion of individuals ages 16-64 years old who are currently employed or actively seeking employment.</p>
<p>Data Source: 2017 ACS 5-Year Estimates: Table B23025</p>
<p>Years of Data: 2013-2017</p>
<p>Threshold or Parameters of Comparison: 63.2%</p>

The national LFPR has stood at 63% since 2013, and was 63.2% in November 2019 (BLS). See: <https://www.bls.gov/opub/mlr/2016/article/labor-force-participation-what-has-happened-since-the-peak.htm> and <https://www.bls.gov/news.release/empsit.nr0.htm>

Contacts:

Teresa Gillotti, Washtenaw County Office of Community and Economic Development
Natalie Peterson, Poverty Solutions



ECONOMIC WELL-BEING

Access to Financial Institutions (Banks and Credit Unions)

Operationalization: The number of brick and mortar banks or credit unions within a 1-mile radius of the center of the census tract.

Data Source: New America

Available at <https://www.newamerica.org/in-depth/mapping-financial-opportunity/where-are-financial-services-located/>

Years of Data: 2015

Threshold or Parameters of Comparison: 2 to 7

This is a benchmark for modest geographic choice, meaning a) people have some choice among institutions nearest them, and b) this threshold of "mainstream" branches may outnumber alternative financial services, so that people can access presumably lower-cost services at "mainstream" branches, even while alternative financial services are in proximity.

Contacts:


Teresa Gillotti, Washtenaw County Office of Community and Economic Development
Terri Friedline, University of Michigan, tfriedli@umich.edu
Natalie Peterson, Poverty Solutions

Child Poverty

Operationalization: Defined as the proportion of individuals under the age of 18 who are at or above the federal poverty level, by Census tract

Data Source: 2017 ACS 5-Year Estimates: Table B17001
Years of Data: 2013-2017
Threshold or Parameters of Comparison: 18.0% The national rate, according to 2018 ACS 1-year estimates.
Contacts: Teresa Gillotti, Washtenaw County Office of Community and Economic Development Natalie Peterson, Poverty Solutions

<h2>Homeownership</h2>
Operationalization: Defined as the proportion of homeowners among all residential land parcels. Compares the rate of homeowners (defined as individuals living in a residence that they own) to renters within an area.
Data Source: Washtenaw County
Years of Data: 2018
Threshold or Parameters of Comparison: 80% The homeownership rate for the Midwest overall in the 4 th quarter of 2019, according to the US Census, Quarterly Residential Vacancies and Homeownership (https://www.census.gov/housing/hvs/files/currenthvspress.pdf)
Contacts: Teresa Gillotti, Washtenaw County Office of Community and Economic Development Natalie Peterson, Poverty Solutions



EDUCATION & TRAINING

<h3>Preschool Enrollment</h3>
Operationalization: Defined as the proportion of 3 and 4 year olds enrolled in school (public or private), among all 3 and 4 year olds in the Census tract.

Data Source: ACS 5-Year Estimates, Tables B09001 and B14003
Years of Data: 2013-2017
Threshold or Parameters of Comparison: 75% Represents an average combined threshold for both 3 and 4 year old children, based upon the data from states offering a “universal” prekindergarten program (Washtenaw Intermediate School District).
Contacts: Alan Oman, WISD aoman@washtenawisd.org Margy Long, WISD, mlong@washtenawisd.org Natalie Peterson, Poverty Solutions

3rd Grade Reading Proficiency
Operationalization: Defined as the proportion of 3 rd graders scoring in the proficient range of the M-STEP English Language and Arts (ELA) assessment, by Census tract.
Data Source: Washtenaw Intermediate School District (WISD)
Years of Data: Spring test data for 2015-16, 2016-17, and 2017-18 school years
Threshold or Parameters of Comparison: 60% (WISD)
Contacts: Naomi Norman, WISD, nnorman@washtenawisd.org Merri Lynn Colligan, WISD, mcolligan@washtenawisd.org Natalie Peterson, Poverty Solutions
Notes: <ul style="list-style-type: none"> ● Universe is all 3rd graders taking the M-STEP during the 2015-16, 2016-17, and 2017-18 school years, who have a home address within the county (aka, excludes school of choice students who live outside Washtenaw County). ● Students aggregated by home address to Census tract level. ● Data not reported for any tracts with fewer than 10 students in the numerator (number who are proficient) or fewer than 30 students in the denominator (total number of 3rd graders), according to FERPA.

6-Year High School Graduation Rate
Operationalization: Defined as the 6-year graduation rate by Census tract, across 3 cohorts.

Data Source: Washtenaw Intermediate School District
Years of Data: 2010-11 through 2017-18 school years.
Threshold or Parameters of Comparison: 60% (WISD)
Contacts: Merri Lynn Colligan, WISD, mcolligan@washtenawisd.org David Spitzley, WISD, dspitzle@washtenawisd.org Natalie Peterson, Poverty Solutions
Notes: <ul style="list-style-type: none"> • Universe is the 6-year timespan of cohorts for freshman entering WISD public school 2010-11, 2011-12, and 2012-13 and up to 2015-16, 2016-17, and 2017-18. • Removed from universe: all tracts with <10 in numerator or <30 in denominator based off FERPA, students choosing in from outside Washtenaw County, completers and late completers, deceased, and students withdrawn from Michigan public schools. • Graduation rate = (4, 5, 6 year, or after 6-year graduates) / (all graduates + drop outs).



COMMUNITY ENGAGEMENT & STABILITY

Active Voters
Operationalization: Defined as the proportion who voted in the 2018 midterm election, out of the eligible citizen voting population.
Data Source: <ul style="list-style-type: none"> • Voter turnout: Washtenaw County Clerk • Eligible citizen voting population: Citizen Voting Age Population by Race and Ethnicity (CVAP), ACS
Years of Data: <ul style="list-style-type: none"> • Voter turnout: Voters participating 11-8-2018 • Eligible citizen voting population: CVAP, ACS 2017 5-Year Estimates

<p>Threshold or Parameters of Comparison: 60%</p> <p>The typical average turnout for a November general election, among all registered voters (Washtenaw County Clerk).</p>
<p>Contacts:</p> <p>Edward Golembiewski, Washtenaw County Clerk, golembiewskie@washtenaw.org Teresa Gillotti, Washtenaw County Office of Community and Economic Development Natalie Peterson, Poverty Solutions</p>
<p>Notes:</p> <ul style="list-style-type: none"> • Some values may be over 100% due to discrepancies between voter registrations and current residence. • Note that all registered voters includes those who are both active and inactive: meaning those who have as well as those who haven't participated in an election within 6 consecutive calendar years

<h2>Youth Criminal Charges</h2>
<p>Operationalization: Defined as the number of juveniles charged in Juvenile Court from 2016 to 2018 in this tract.</p>
<p>Data Source: Washtenaw County Juvenile Court</p>
<p>Years of Data: 2016-18</p>
<p>Threshold or Parameters of Comparison: None.</p>
<p>Contacts:</p> <p>Teresa Gillotti, Washtenaw County Office of Community and Economic Development Kathryne O'Grady, Juvenile Court Administrator, ogradyk@washtenaw.org Natalie Peterson, Poverty Solutions</p>
<p>Notes:</p> <ul style="list-style-type: none"> • Only youth living in Washtenaw County (based off home address) were included. Youth charged with an offense occurring in county, who lived outside of county, excluded. • Only one charge per individual included. If individuals had multiple charges, the first charge was included. Individuals were assigned to tracts based off home address. • Age range of included juveniles: 6-17 years old. • Charges were only reported if there were 0 or at least 5 in a track, to prevent identifying individuals. (0 was reported because it couldn't identify anyone.) In other words, charges tied to only 1 to 4 individuals in a tract were redacted to ensure privacy.

Vacancy Status
Operationalization: Defined as the proportion of residential properties marked as vacant for 36 months or longer.
Data Source: HUD/USPS Administrative Vacancy Data
Years of Data: September 2018 (Q3) Quarterly Data
Threshold or Parameters of Comparison: 8-12% 8 to 12% is a moderately high vacancy standard (Lincoln Institute on Land Policy and Center for Community Progress, https://www.lincolninst.edu/sites/default/files/pubfiles/empty-house-next-door-full.pdf).
Contacts: Teresa Gillotti, Washtenaw County Office of Community and Economic Development Natalie Peterson, Poverty Solutions
Notes: <ul style="list-style-type: none"> ● Note that address data is administrative, not specifically collected as vacancy data. ● Mail carriers have individual discretion on how apply <i>no-stat</i> labels, which affect the proportion of addresses tagged as the universe of residential addresses: <ul style="list-style-type: none"> ○ Addresses along rural routes that appear to be vacant for 90 days. ○ Addresses for properties that are still under construction, and ○ Urban addresses that the mail carrier decides are unlikely to be occupied again any time soon—meaning that both areas of high growth and severe decline may be labeled no-stat.

SUMMARY LAYERS

List:

- Population count
- Population density
- Population count and proportion by age
- Population count and proportion by race and ethnicity
- Gini Index of Income Inequality
- Population age 16-19, not enrolled in school and not employed (count)

All data pulled from 2017 5-year ACS estimates.